

## 2001 Chevrolet S10 Pickup

2001 ACCESSORIES & EQUIPMENT Power Door Locks - Blazer, Bravada, Jimmy, Sonoma & S10 Pickup

### 2001 ACCESSORIES & EQUIPMENT

#### Power Door Locks - Blazer, Bravada, Jimmy, Sonoma & S10 Pickup

## DESCRIPTION & OPERATION

**NOTE:** On some vehicles, power door lock system is integrated with the Remote Keyless Entry (RKE) system. For information on RKE, see appropriate REMOTE KEYLESS ENTRY SYSTEMS article.

When door lock switch is operated, all doors will lock or unlock. Each lock can also be operated manually. Locks are operated by reversible actuators. Door lock switches operate relays which energize actuators by supplying battery voltage to one terminal and ground to the other terminal.

When any door lock switch is moved to LOCK position, switch completes a circuit to the door lock relay. The relay closes, supplying voltage to door lock actuators in each door to operate door locks. When door lock switch is released, circuit is opened and actuators turn off. When door lock switch is moved to UNLOCK position, the unlock relay is energized and polarity to actuators is reversed. Driver door unlock is controlled through driver unlock relay by Body Control Module (BCM). When door lock switch is moved to UNLOCK position, battery voltage is also sent to BCM which in turn supplies voltage to driver door unlock relay. Driver door unlock relay closes, supplying voltage to driver door actuator to unlock door.

Door lock switches are usually closed for just a moment. If door lock switches are held closed for an extended time, a circuit breaker in each actuator will open to protect it against damage. Circuit breakers close automatically when they cool down.

## COMPONENT LOCATIONS

### COMPONENT LOCATIONS

Component	Location
Body Control Module	Lower Center Of Instrument Panel, On HVAC Case
Body Relay Block	Left Side Of Dash, To Right Of Instrument Panel Fuse Block
Door Lock Relay	In Body Relay Block
Door Unlock Relay	In Body Relay Block
Driver Door Unlock Relay	In Body Relay Block
Instrument Panel Fuse Block	Left Side Of Instrument Panel, Near Door Jamb Switch
Underhood Fuse Block	On Top Of Left Wheel Well

## TROUBLE SHOOTING

### PRELIMINARY INSPECTION

Before performing any testing procedures, perform the following visual inspections:

- Check MIR/LKS fuse (3-amp) in under hood fuse block and PWR LKS fuse No. 14 (15-amp) in instrument panel fuse block. If fuses are blown, service and repair source of overload. Replace fuses.
- Check for mechanical failures or binding linkage.
- Check for broken or partially broken wire inside insulation, which could cause system malfunction but prove good in a continuity/voltage check with system disconnected. These circuits may be intermittent or resistive when loaded. Check by monitoring voltage drop with system under load.
- Check for proper installation of aftermarket electronic equipment.

## SELF-DIAGNOSTIC SYSTEM

### DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK

1. Install scan tool. If scan tool powers up, go to next step. If scan tool does not power up, perform appropriate diagnostic procedure. See appropriate BODY CONTROL MODULES article.
2. Turn ignition on, engine off. Following scan tool manufacturer's instructions, attempt to establish communication with Body Control Module (BCM). If communication with BCM is established, go to next step. If communication with BCM is not established, diagnose communication problem with class 2 device. See appropriate BODY CONTROL MODULES article.
3. Select display DTCs function for BCM. Record all displayed DTCs and status of displayed DTCs. If DTCs are displayed, go to next step. If no DTCs are displayed, diagnose by symptom. See **SYMPTOM INDEX** table under SYSTEM TESTS.
4. If scan tool displays any DTCs which begin with "U", see SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 DEVICE under SYSTEM TESTS in appropriate BODY CONTROL MODULES article. If scan tool does not display any DTCs which begin with "U", go to next step.
5. If scan tool displays DTC B1000 or DTC B1005, repair these DTCs first. See appropriate BODY CONTROL MODULES article. If scan tool does not display DTC B1000 or DTC B1005, perform appropriate test. See **DIAGNOSTIC TROUBLE CODE DEFINITIONS** table.

### DIAGNOSTIC TROUBLE CODE DEFINITIONS

DTC (1)	Description

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<b>B3137</b>	All Door Lock Circuits Low
<b>B3138</b>	All Door Lock Circuits High
<b>B3147</b>	Right Front Unlock Switch Circuit Low
<b>B3148</b>	Left Front Unlock Switch Circuit High
UXXXX	(2)

(1) DTCs listed in this table are for testing covered in this article. For a complete listing of DTCs, see appropriate BODY CONTROL MODULES article.

(2) For any DTC beginning with the letter "U", diagnose communication problem with class 2 device. See SELF-DIAGNOSTIC SYSTEM in appropriate BODY CONTROL MODULES article.

## DIAGNOSTIC TESTS

**NOTE:** See appropriate wiring diagram under **WIRING DIAGRAMS** to assist in testing procedures.

### DTC B3137: ALL DOOR LOCK CIRCUITS LOW OR DTC B3138: ALL DOOR LOCK CIRCUITS HIGH

#### Circuit Description

Body Control Module (BCM) monitors and supplies an output on Light Blue wire. When BCM receives lock command from remote control door lock receiver, BCM supplies voltage on Light Blue wire to lock doors. RKE transmitter and/or door locks must be activated to lock doors. DTC sets when BCM receives lock signal from remote control door lock receiver module and Light Blue wire is shorted to ground for more than 0.25 second. System voltage must be 9.0-16.0 volts. DTC B3138 sets when door lock control circuit is shorted to battery voltage for at least 904 seconds.

#### Diagnostic Procedure

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Connect scan tool. Turn ignition on, engine off. Using scan tool, command door lock relay ON and OFF. If door lock relay turns ON and OFF with each command, see **DIAGNOSTIC AIDS**. If door lock relay does not turn ON and OFF with each command, go to next step.
3. Turn ignition off. Disconnect door lock relay. Turn ignition on, engine off. Using test light connected to ground, probe door lock relay connector terminal "A9" (Light Blue wire). Using scan tool, command door lock relay ON and OFF. If test light turns ON and OFF with each command, go to next step. If test light does not turn ON and OFF with each command, go to step 5.

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4. Connect test light between door lock relay connector terminals "A9" (Light Blue wire) and "C8" (Black wire). Using scan tool, command door lock relay ON and OFF. If test light turns ON and OFF with each command, go to step 8 . If test light does not turn ON and OFF with each command, go to step 10 .
5. If test light remains illuminated with each command, go to step 7 . If test light does not remain illuminated with each command, go to next step.
6. Check Light Blue wire from BCM for a short to ground. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 9 .
7. Check Light Blue wire from BCM for a short to voltage. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 9 .
8. Check door lock relay connector for poor connection. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 11 .
9. Check BCM connectors for poor connection. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 12 .
10. Repair open in Black wire between body relay block and ground. After repairs, go to step 13 .
11. Replace door lock relay. After repairs, go to step 13 .
12. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs, go to next step.
13. Using scan tool, clear DTCs. Operate vehicle within conditions for running DTC. If DTC does not reset, system is okay.

### Diagnostic Aids

Always begin diagnosis with first DTC listed on scan tool. Scan tool must display DTC B3137 as current DTC before performing these diagnostics. Perform a visual inspection for loose or poor connections at all related components.

### DTC B3147: RIGHT FRONT UNLOCK SWITCH CIRCUIT LOW OR DTC B3148: LEFT FRONT UNLOCK SWITCH CIRCUIT HIGH

#### Circuit Description

Body Control Module (BCM) monitors and supplies an output on White wire. When BCM receives unlock command from remote control door lock receiver, BCM supplies voltage on White wire to unlock doors. RKE transmitter and/or door locks must be activated to unlock doors. DTC sets when BCM receives unlock signal from remote control door lock receiver module and White wire is shorted to ground for more than 0.25 second. System voltage must be 9.0-16.0 volts. DTC B3148 sets when door unlock control circuit is shorted to battery voltage for more than 904 seconds.

#### Diagnostic Procedure

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1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Connect scan tool. Turn ignition on, engine off. Using scan tool, command door unlock relay ON and OFF. If door unlock relay turns ON and OFF with each command, see **DIAGNOSTIC AIDS** . If door unlock relay does not turn ON and OFF with each command, go to next step.
3. Turn ignition off. Disconnect door unlock relay. Turn ignition on, engine off. Using test light connected to ground, probe door unlock relay connector terminal "F8" (White wire). Using scan tool, command door unlock relay ON and OFF. If test light turns ON and OFF with each command, go to next step. If test light does not turn ON and OFF with each command, go to step 5 .
4. Connect test light between door unlock relay connector terminals "F8" (White wire) and "C8" (Black wire). Using scan tool, command door unlock relay ON and OFF. If test light turns ON and OFF with each command, go to step 8 . If test light does not turn ON and OFF with each command, go to step 10 .
5. If test light remains illuminated with each command, go to step 7 . If test light does not remain illuminated with each command, go to next step.
6. Check White wire from BCM for a short to ground. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 9 .
7. Check White wire from BCM for a short to voltage. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 9 .
8. Check door unlock relay connector for poor connection. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 11 .
9. Check BCM connectors for poor connection. If problem was found, repair as necessary, and then go to step 13 . If problem was not found, go to step 12 .
10. Repair open in Black wire between body relay block and ground. After repairs, go to step 13 .
11. Replace door unlock relay. After repairs, go to step 13 .
12. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs, go to next step.
13. Using scan tool, clear DTCs. Operate vehicle within conditions for running DTC. If DTC does not reset, system is okay.

### Diagnostic Aids

Always begin diagnosis with first DTC listed on scan tool. Scan tool must display DTC B3147 as a current DTC before performing these diagnostics. Perform a visual inspection for loose or poor connections at all related components.

## SYSTEM TESTS

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**NOTE:** See appropriate wiring diagram under **WIRING DIAGRAMS** to assist in testing procedures.

### SYMPTOM INDEX

Symptom	Perform Test
Power Door Locks Lock-Out Feature Inoperative	<u>A</u>
Power Door Locks Inoperative	<u>B</u>
Power Door Locks Inoperative-One Door Or Switch	<u>C</u>
Power Door Lock Inoperative, Unlock Operates	<u>D</u>
Power Door Lock Inoperative - Driver Door	<u>E</u>
Power Door Unlock Inoperative, Lock Operates	<u>F</u>
Power Door Locks Inoperative - Automatic	<u>G</u>

### TEST A: POWER DOOR LOCKS LOCK-OUT FEATURE INOPERATIVE

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Roll driver window down. Insert key into ignition. Leave ignition switch in OFF position. Open all doors and liftgate (if equipped). Command doors to lock with a door lock switch. If all doors locked and then driver door unlocked, check for and correct intermittent problem. If door locks did not operate as specified, go to next step.
3. Install scan tool. Using scan tool, observe key-in-ignition data parameter in BCM data list. Insert and remove ignition key from ignition switch. If scan tool indicates that key-in-ignition data parameter is within specified range, go to next step. If data parameter is not within specified range, go to step 5 .
4. Using scan tool, observe driver door jamb switch data parameter in BCM data list. Open and close driver door. If scan tool indicates that driver door jamb switch data parameter is within specified range, go to step 6 . If data parameter is not within specified range, go to step 8 .
5. Disconnect BCM. Using test light connected to battery positive voltage, test key-in-ignition switch signal circuit (Light Green wire) at BCM harness connector. Insert key into ignition. If test light illuminates, go to step 17 . If test light does not illuminate, go to step 11 .
6. Disconnect BCM. Using test light connected to battery positive voltage, test secondary door latch switch signal circuit at BCM harness connector. Open and close doors one at a time. If test light illuminates and turns off with each door movement, go to next step. If test light does not illuminate and turn off with each door movement, go to step 10 .
7. Disconnect BCM. Using test light connected to battery positive voltage, test terminal "B9" (Light Green wire) at BCM harness connector. Open and close liftgate/cargo door. If test light illuminates and turns off with cargo door/liftgate movement, go to

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- step 17 . If test light does not illuminate and extinguish as described, go to step 12 .
8. Disconnect BCM. Using test light connected to battery positive voltage, test left front door open switch signal circuit at BCM harness connector. Open and close driver door. If test light illuminates and turns off with movement of driver door, go to step 17 . If test light does not illuminate and extinguish as specified, go to next step.
  9. Test for an open in left front door open switch signal circuit. If problem was found and repaired, go to step 23 . If problem was not found, go to step 13 .
  10. Test for an open in secondary door latch switch signal circuit. If problem was found, repair as necessary and then go to step 23 . If problem was not found, go to step 14 .
  11. Test for an open in key-in-ignition switch signal circuit (Light Green wire). If problem was found, repair as necessary and then go to step 23 . If problem was not found, go to step 15 .
  12. Test for an open in cargo door/liftgate ajar switch signal circuit. If problem was found, repair as necessary and then go to step 23 . If problem was not found, go to step 16 .
  13. Inspect for poor connections at driver door jamb switch. If problem was found, repair as necessary and then go to step 23 . If problem was not found, go to step 18 .
  14. Inspect for poor connections at passenger door jamb switch. If problem is found, repair as necessary and then go to step 23 . If problem is not found, go to step 19 .
  15. Inspect for poor connections at key-in-ignition switch. If problem is found, repair as necessary and then go to step 23 . If problem is not found, go to step 20 .
  16. Inspect for poor connections at cargo door jamb/liftgate ajar switch. If problem is found, repair as necessary and then go to step 23 . If problem is not found, go to step 22 .
  17. Inspect for poor connections at BCM. If problem was found, repair as necessary and then go to step 23 . If problem was not found, go to step 21 .
  18. Replace driver door jamb switch. After completing repair, go to step 23 .
  19. Replace passenger door jamb switch. After completing repair, go to step 23 .
  20. Replace key-in-ignition switch. After completing repair, go to step 23 .
  21. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION.
  22. Replace cargo door/liftgate ajar switch. After completing repair, go to next step.
  23. Operate system in order to verify repair.

### TEST B: POWER DOOR LOCKS INOPERATIVE

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Actuate all door switches to both LOCK and UNLOCK positions. If all doors did not lock and unlock, go to next step. If all doors did lock and unlock, check for intermittent



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problem.

3. If any door locks did operate, see **TEST C: POWER DOOR LOCKS INOPERATIVE-ONE DOOR OR SWITCH** . If door locks did not operate, go to next step.
4. Install scan tool. Using scan tool, command doors to lock and unlock. If doors did lock and unlock when commanded, go to step 12 . If doors did not lock and unlock, go to next step.
5. Remove door lock relay. Using test light connected to ground, test battery positive voltage circuits (Orange wire) for door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 13 .
6. Using test light connected to battery positive voltage, test ground circuits (Black wires) for door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 14 .
7. Using test light connected to ground, test door lock actuator circuit (Gray wire) at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 9 .
8. Remove door unlock relay. Using test light connected to battery positive voltage, test door unlock relay control circuit (Tan wire) at fuse block. If test light illuminates, go to step 11 . If test light does not illuminate, go to step 16 .
9. With test light still connected between door lock actuator lock circuit, actuate door lock switch to UNLOCK position. If test light illuminates, go to step 15 . If test light does not illuminate, go to next step.
10. Install door lock relay. Remove door unlock relay. Using test light connected to ground, backprobe door lock actuator unlock circuit (Tan wire) at fuse block. If test light illuminates, go to step 16 . If test light does not illuminate, go to step 17 .
11. Test for short to ground in door unlock relay control circuit (Tan wire). If problem was found and repaired, go to step 19 . If problem was not found and repaired, go to step 18 .
12. Repair open or short to ground in battery positive voltage circuit (Orange wire) between MIR/LOCK fuse and door lock switch. After completing repair, go to step 19 .
13. Repair open or short to ground in battery positive voltage supply circuit (Orange wire) between DR LOCK fuse and door lock and unlock relays. After completing repair, go to step [19](#) .
14. Repair open in ground circuit (Black wire) for door lock and unlock relays. After completing repair, go to step 19 .
15. Replace door lock relay. After completing repair, go to step 19 .
16. Replace door unlock relay. After completing repair, go to step 19 .
17. Repair open in door lock actuator lock and/or unlock circuits. After completing repair, go to step 19 .
18. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL &



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INSTALLATION. Go to next step.

19. Operate system to verify repair.

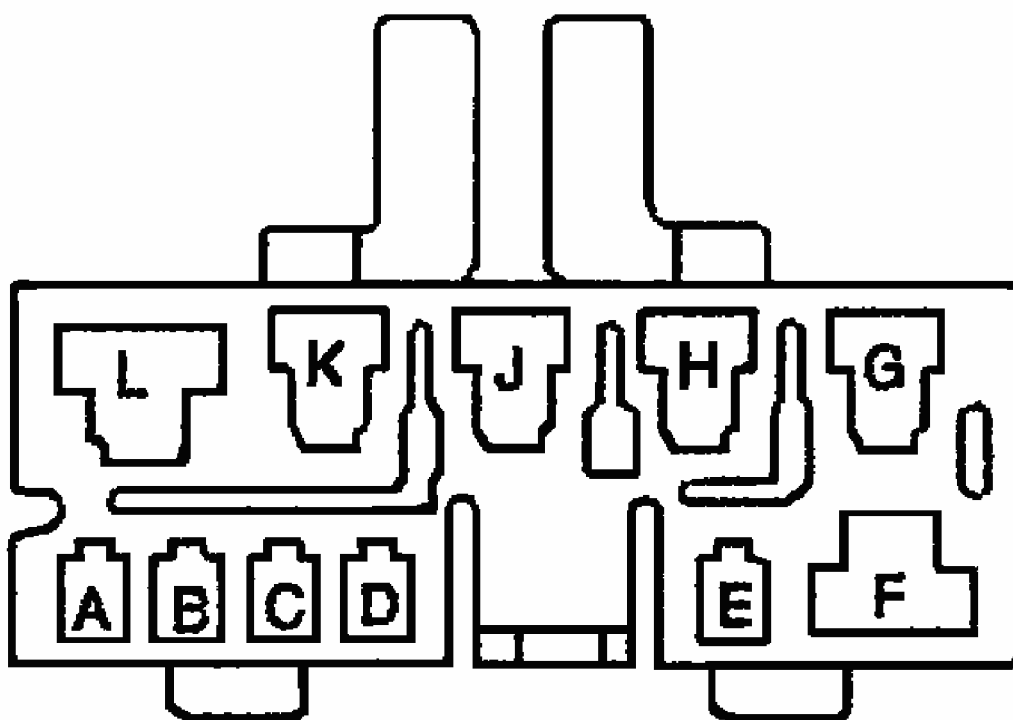
### TEST C: POWER DOOR LOCKS INOPERATIVE-ONE DOOR OR SWITCH

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Actuate all door lock switches to both LOCK and UNLOCK positions. If all doors locked and unlocked from all switches, check for intermittent problem. If all doors did not lock and unlock from all switches, go to next step.
3. If all door lock switches locked and unlocked at least one door lock actuator, go to next step. If door locks did not operate as specified, go to step 6 .
4. Disconnect inoperative door lock actuator. Using test light connected to ground, test door lock circuit (Gray wire) at door lock actuator harness. Actuate door lock switch to LOCK position. If test light illuminates, go to next step. If test light did not illuminate, go to step 9 .
5. Using test light connected to ground, test door lock actuator unlock circuit (Tan wire) at door lock actuator harness connector. Actuate door lock switch to UNLOCK position. If test light illuminates, go to step 15 . If test light does not illuminate, go to step 10 .
6. Gain access to inoperative door lock switch. Using a test light connected to ground, backprobe terminal "D" (Orange wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 11 .
7. Using test light connected to ground, backprobe door lock control circuit at door lock switch harness connector. Actuate door lock switch to lock position. See **WIRING DIAGRAMS** . If test light illuminates, go to next step. If test light does not illuminate, go to step 12 .
8. Using test light connected to ground, backprobe door unlock control circuit at door lock switch harness connector. See **WIRING DIAGRAMS** . Actuate door lock switch to unlock position. If test light illuminates, go to step 14 . If test light does not illuminate, go to step 12 .
9. Repair open in door lock motor lock control circuit (Gray wire). After completing repairs, go to step 17 .
10. Repair open in door lock motor unlock circuit (Tan wire). After completing repairs, go to step 17 .
11. Repair open in battery positive voltage circuit (Orange wire). After completing repairs, go to step 17 .
12. Inspect for poor connections at door lock switch. If problem was found, repair as necessary and then go to step 17 . If problem was not found, go to next step.
13. Replace door lock switch. See **DOOR LOCK SWITCH** under REMOVAL & INSTALLATION. After completing repair, go to step 17 .

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14. Repair open in door lock motor lock and/or unlock circuit. After completing repair, go to step 17 .
15. Inspect for poor connections at door lock actuator. If problem was found, repair as necessary and then go to step 17 . If problem was not found, go to next step.
16. Replace door lock actuator. After completing repair, go to next step.
17. Operate system in order to verify



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**Fig. 1: Identifying Door Lock Switch Connector Terminals**  
Courtesy of GENERAL MOTORS CORP.

### TEST D: POWER DOOR LOCK INOPERATIVE, UNLOCK OPERATES

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Actuate each door lock switch, one at a time, to LOCK position. If doors locked from each switch, check for intermittent problem. If locks did not operate as specified, go to next step.
3. If door locks locked from any switch, see **TEST C: POWER DOOR LOCKS**

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**INOPERATIVE-ONE DOOR OR SWITCH** . If door locks did not lock from any switch, go to next step.

4. Remove door lock relay. Using test light connected to ground, test battery positive voltage (Orange wire) circuit of door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 14 .
5. Using test light connected to ground, test battery positive voltage circuit (Orange wire) of switched side of door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 14 .
6. Using test light connected to battery positive voltage, test ground circuit (Black wire) on coil side of door lock relay circuit. If test light illuminates, go to next step. If test light does not illuminate, go to step [15](#) .
7. Using test light connected to ground, test door lock control circuit (Light Blue wire) of door lock relay. Actuate door lock switch to lock position. If test light illuminates, go to next step. If test light does not illuminate, go to step 17 .
8. Inspect for poor connections at door lock relay. If poor connections were found, repair as necessary and then go to step 18 . If poor connections were not found, go to next step.
9. Remove door unlock relay. Using test light connected to battery positive voltage, test ground circuit (Black wire) of door unlock relay. If test light illuminates, go to next step. If test light does not illuminate, go to step 16 .
10. Install door lock relay. Connect fused jumper between switched side ground circuit (White wire) and load side (Tan wire) of door unlock relay at fuse block. Actuate door locks to LOCK position. If doors locked, go to next step. If doors did not lock, go to step 12 .
11. Inspect for poor connections at door unlock relay. If problem was found, repair and go to step 18 . If problem was not found, go to step 13 .
12. Replace door lock relay. After completing repairs, go to step 18 .
13. Replace door unlock relay. After completing repairs, go to step 18 .
14. Repair open in door lock relay battery positive voltage circuit (Orange wire). After completing repairs, go to step 18 .
15. Repair open in door lock relay ground circuit (Black wire). After completing repairs, go to step 18 .
16. Repair open in door unlock relay ground circuit (Black wire). After completing repairs, go to step 18 .
17. Repair open in door lock control circuit (Gray wire). After completing repairs, go to step 18 .
18. Operate system in order to verify repair.

### TEST E: POWER DOOR LOCK INOPERATIVE - DRIVER DOOR

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System

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Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.

2. Actuate all door lock switches to both LOCK and UNLOCK positions. If driver door locked and unlocked from all switches, check for intermittent problem. If driver door did not lock and unlock from all switches, go to next step.
3. If passenger door locked and unlocked from all switches, go to next step. If passenger door did not lock and unlock from all positions, go to **TEST B: POWER DOOR LOCKS INOPERATIVE**.
4. If driver door locked, go to step 6. If driver door did not lock, go to next step.
5. If driver door unlocked, go to step 8. If driver door did not unlock, go to step 11.
6. Remove driver door unlock relay from fuse block. Using test light connected to battery positive voltage, probe driver door unlock relay control circuit (White wire). Install scan tool. Command doors to unlock. If test light illuminates, go to next step. If test light did not illuminate, go to step 13.
7. Monitor passenger door unlock input data value on scan tool. Actuate door lock switch to UNLOCK position. If data value changed from inactive to active when switch was actuated, go to step 9. If data value did not change, go to step 16.
8. Remove driver door unlock relay. Using test light connected to battery positive voltage, test driver door unlock relay ground circuit (Black wire). If test light illuminates, go to step 14. If test light did not illuminate, go to step 21.
9. Using test light connected to ground, test battery positive circuit (Orange wire) on coil side of driver door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 22.
10. Using test light connected to ground, test battery positive voltage circuit (Orange wire) on switched side of driver door lock relay. If test light illuminates, go to step 14. If test light does not illuminate, go to step 22.
11. Disconnect driver door lock actuator. Using a test light connected to ground, test door lock actuator lock circuit (Gray wire) at door lock actuator harness connector. Actuate door lock switch to LOCK position. If test light illuminates, go to next step. If test light does not illuminate, go to step 19.
12. Using a test light connected to ground, test door lock actuator unlock circuit (Tan wire) at door lock actuator harness connector. Actuate door lock switch to UNLOCK position. If test light illuminates, go to step 16. If test light does not illuminate, go to step 20.
13. Test for an open in driver door unlock relay control circuit between BCM and driver door unlock relay (Light Green wire). If problem was found, repair as necessary and then go to step 25. If problem was not found, go to step 17.
14. Inspect for poor connections at driver door unlock relay. If problem was found, repair as necessary and then go to step 25. If problem was not found, go to step 18.
15. Check for an open in door unlock control circuit between BCM and door lock switches (White wire). If problem was found, repair as necessary and then go to step 25. If

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problem was not found, go to step 17 .

16. Inspect for poor connections at driver door lock actuator. If problem was found, repair as necessary and then go to step 25 . If problem was not found, go to step 23 .
17. Inspect for poor connections at BCM. If problem was found, repair as necessary and then go to step 25 . If problem was not found, go to step 24 .
18. Replace driver door unlock relay. After completing repair, go to step 25 .
19. Repair open in door lock control circuit (Light Blue wire). After completing repair, go to step 25 .
20. Repair open in door unlock control circuit (White wire). After completing repair, go to step 25 .
21. Repair open in driver door lock relay ground circuit (Black wire). After completing repair, go to step 25 .
22. Repair open in driver door lock relay battery positive voltage circuit (Orange wire). After completing repair, go to step 25 .
23. Replace door lock actuator. See **DOOR LOCK ACTUATOR** under REMOVAL & INSTALLATION. Go to step 25 .
24. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION. Go to next step.
25. Operate system in order to verify repair.

### TEST F: POWER DOOR UNLOCK INOPERATIVE, LOCK OPERATES

1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Actuate each door lock switch, one at a time, to UNLOCK position. If doors unlocked from each position, check for intermittent problem. If doors did not unlock from each switch, go to next step.
3. If doors unlocked from any switch, see **TEST C: POWER DOOR LOCKS INOPERATIVE-ONE DOOR OR SWITCH** . If doors did not unlock from any switch, go to next step.
4. Install scan tool. Using scan tool, command doors to unlock. If doors unlocked, go to next step. If doors did not unlock, go to step 6 .
5. Using scan tool, observe passenger door unlock parameter. Actuate a door lock switch to UNLOCK position. If passenger door unlock parameter changed state, go to step 20 . If passenger door unlock parameter did not change state, go to step 13 .
6. Remove door unlock relay. Using test light connected to ground, test battery positive voltage circuit (Orange wire) on coil side of door unlock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 18 .
7. Using a test light connected to ground, test battery positive voltage circuit on switched side of door unlock relay (Orange wire) . If test light illuminates, go to next step. If test

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light does not illuminate, go to step [18](#) .

8. Using test light connected to ground, probe door unlock control circuit (White wire) of door unlock relay. With scan tool, command doors to unlock. If test light illuminates, go to next step. If test light did not illuminate, go to step 14 .
9. Remove door lock relay. Using a test light connected to battery positive voltage, probe ground circuit on switched side of door lock relay at fuse block. If test light illuminates, go to next step. If test light does not illuminate, go to step 19 .
10. Install door unlock relay. Connect a fused jumper between switched side ground circuit (Black wire) and load side (Tan wire) of door lock relay at fuse block. Using scan tool, command doors to unlock. If doors unlocked, go to step 12 . If doors did not unlock, go to next step.
11. Inspect for poor connections at door unlock relay. If problem was found, repair as necessary and then go to step 21 . If problem was not found, go to step 16 .
12. Inspect for poor connections at door lock relay. If problem was found, repair as necessary and then go to step 21 . If problem was not found, go to step 17 .
13. Test for an open in door unlock control circuit (White wire) between BCM and door lock switches. If problem was found, repair as necessary and then go to step 21 . If problem was not found, go to step 15 .
14. Test for an open in door lock control circuit (Light Blue wire) between BCM and door unlock relay. If problem was found, repair as necessary and then go to step 21 . If problem was not found, go to next step.
15. Inspect for poor connections at BCM. If problem was found, repair as necessary and then go to step 21 . If problem was not found, go to step 20 .
16. Replace door lock relay. After completing repair, go to step 21 .
17. Replace door unlock relay. After completing repair, go to step 21 .
18. Repair open in door lock relay battery positive voltage circuit (Orange wire). After completing repair, go to step 21 .
19. Repair open in door lock relay ground circuit (Black wire). After completing repair, go to step 21 .
20. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION. After completing repair, go to next step.
21. Operate system in order to verify repair.

### TEST G: POWER DOOR LOCKS INOPERATIVE - AUTOMATIC

**NOTE:** Automatic door lock system can be programmed to perform different functions and may also be disabled. Before continuing with diagnosis of system, ensure that automatic door locks are programmed to perform the specific function that is the cause of the complaint.

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1. If Diagnostic System Check has been performed, go to next step. If Diagnostic System Check has not been performed, perform **DOOR SYSTEM DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Lock and unlock doors from any door lock switch. If doors operate correctly, go to next step. If door lock system does not operate correctly, go to **SYMPTOM INDEX** .
3. Install scan tool. Using output controls, command doors to lock and unlock. If doors locked and then unlocked when commanded, go to next step. If doors did not operate as specified, go to step 7 .
4. Raise and support vehicle. Start engine and place transmission in gear. Accelerate slowly to 20 mph and hold speed. Using scan tool, monitor vehicle speed in BCM. If scan tool displays correct speed, go to next step. If scan tool displays incorrect speed, go to step 8 .
5. If doors locked, go to next step. If doors did not lock, go to step 11 .
6. Apply brakes to stop drive wheels. Place transmission in PARK. Turn engine off. Remove ignition key. If doors unlocked, check for intermittent problem. If doors did not unlock, go to step 9 .
7. Test for an open in door lock and door unlock control circuits. See **WIRING DIAGRAMS** . If problem was found, repair as necessary and then go to step 12 . If problem was not found, go to step 10 .
8. Test for an open or high resistance in VSS signal circuit (Dark Green wire). If problem was found, repair as necessary and then go to step 12 . If problem was not found, go to step 10 .
9. Test for short to ground in key-in-ignition switch signal circuit (Light Green wire). If problem was found, repair as necessary and then go to step 12 . If problem was not found, go to step 10 .
10. Inspect for poor connections at BCM harness connectors. If problem was found, repair as necessary and then go to step 12 . If problem was not found, go to next step.
11. Replace BCM. See **BODY CONTROL MODULE** under REMOVAL & INSTALLATION.
12. Operate system in order to verify repair.

## REMOVAL & INSTALLATION

**CAUTION:** When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See **COMPUTER RELEARN PROCEDURES** article in **GENERAL INFORMATION** before disconnecting battery.

## BODY CONTROL MODULE



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### Removal & Installation

**NOTE:**      **Ensure ignition is off. Disconnect Brown connector last and reconnect Brown last.**

Remove left and center instrument panel sound insulators. Disconnect BCM connectors, brown connector last. Bend retainers to clear BCM and pull BCM from bracket. To install, reverse removal procedure. Reconnect brown connector last. Program BCM. See appropriate BODY CONTROL MODULES article.

### DOOR LOCK ACTUATOR

#### Removal & Installation (Front Door)

1. Raise window to full up position. Disconnect negative battery cable. Remove inside door handle bezel screw and remove inside door handle bezel. Remove window regulator handle (if equipped). Using flat-blade tool, carefully pry up on front edge of accessory switch panel. Disconnect electrical connectors from switches. Remove accessory switch panel from door. Remove trim panel armrest screws. Use Door Trim Pad/Garnish Clip Remover (J38778) to release door panel retainers. Remove door trim panel from door. Remove water deflector.
2. Remove inside door lock rod and inside door handle rod from lock assembly. Remove outside door lock rod and door handle rod from lock assembly. Disconnect door lock actuator connector from lock assembly. Remove lock assembly screws. Remove lock assembly from door. To install, reverse removal procedure.

#### Removal & Installation (Rear Door)

1. Remove window weatherstrip. Raise window to full up position. Disconnect negative battery cable. Remove inside door handle bezel screw and remove inside door handle bezel. Remove window regulator handle (if equipped). Using flat-blade tool, carefully pry up on power window switch. Disconnect electrical connector from switch. Remove power window switch from door. Remove trim panel armrest screws. Use Door Trim Pad/Garnish Clip Remover (J38778) to release door panel retainers. Remove door trim panel from door. Remove water deflector.
2. Remove inside door lock rod and inside door handle rod from lock assembly. Remove outside door handle rod from lock assembly. Disconnect door lock actuator connector from lock assembly. Remove lock assembly screws. Remove lock assembly from door. To install, reverse removal procedure.

### DOOR LOCK SWITCH

#### Removal & Installation

Using flat-blade tool, carefully pry up on front edge of accessory switch panel. Disconnect

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electrical connectors from switches. Remove accessory switch panel from door.

### WIRING DIAGRAMS

**NOTE:** For power door lock system wiring diagrams, see appropriate **REMOTE KEYLESS ENTRY SYSTEMS** article.